

APPLICATIONS

Casting in silicone moulds: transparent prototype parts until a 10 mm thickness: crystal glass like parts, fashion, jewellery, art and decoration parts, lenses for lights.

PROPERTIES

- High transparency (water clear)
- Easy polishing
- High reproduction accuracy
- Good U.V. resistance
- Easy processing
- High stability under temperature

PHYSICAL PROPERTIES				
Composition		ISOCYANATE PX 5210	POLYOL PX 5212	MIXING
Mixing ratio by weight		100	50	
Aspect		liquid	liquid	Liquid
Colour		transparent	bluish	transparent
Viscosity at 25 °C (mPa.s)	BROOKFIELD LVT	200	800	500
Density at 25 °C (g/cm ³)	ISO 1675 : 1985	1,07	1,05	-
Density of the cure product at 23 °C	ISO 2781 : 1996	-	-	1,06
Pot life at 25 °C on 150g (min)	Gel Timer TECAM			8

PROCESSING CONDITIONS

The PX 5212 must be only used in a vacuum casting machine and cast in a pre-heated silicone mould. The respect of 70 °C temperature for the mould is imperative.

Vacuum casting machine utilisation:

- Heat both parts at 20 / 25 °C in case of storage at a lower temperature.
- Weigh isocyanate in the upper cup (do not forget to allow for residual cup waste).
- Weigh polyol in the lower cup (mixing cup).
- After degassing for 10 minutes under vacuum pour isocyanate in polyol and mix for **4 minutes**.
- Cast in the silicone mould, previously heated at 70 °C.
- Put in an oven at 70 °C.
 - 1hour for 3 mm thickness
 - Open the mould, cooling the part with compressed air.
 - Remove the part.
- Post curing treatment is needed to get final properties (after demoulding)
2h at 70 °C + 3h at 80 °C+ 2h at 100 °C
- Use a fixture to handle the part during the post curing treatment
- **NOTA:** Elastic memory material offset any deformation observed during demoulding.

It is important to cast the PX 5212 in a new mould without casting resin previously inside.

Some TG according to post curing process:

- At demoulding stage (after 1 hour at 70 °C): **72 °C**
- 1 hour at 70 °C + 2 hours in oven at 70 °C: **75 °C**
- Previous curing + 2 hours at 80 °C: **80 °C**. *If necessary; Heat up to 100 °C for final TG of 95 °C.*

MECHANICAL PROPERTIES AT 23 °C (1)			
Hardness	ISO 868 : 2003	Shore D1	85
Tensile modulus of elasticity	ISO 527 : 1993	MPa	2,400
Tensile strength	ISO 527 : 1993	MPa	66
Elongation at break in tension	ISO 527 : 1993	%	7.5
Flexural modulus of elasticity	ISO 178 : 2001	MPa	2,400
Flexural strength	ISO 178 : 2001	MPa	110
Choc impact strength (CHARPY)	ISO 179/1eU : 1994	kJ/m ²	48

THERMAL AND SPECIFIC PROPERTIES (1)			
Glass transition temperature (Tg)	ISO 11359-2 : 1999	°C	95
Refractive index	LNE	-	1,511
Coefficient of light transmission	LNE	%	89
Heat deflection temperature	ISO 75 : 2004	°C	85
Maximal casting thickness	-	mm	10
Time before demoulding at 70 °C (3mm)	-	min	60
Linear shrinkage	-	mm/m	7

(1) Average values obtained on standardized specimens / Hardening 4h at 80 °C + 16h at 100 °C

STORAGE CONDITIONS

Shelf life of both parts is 12 months in a dry place and in their original unopened containers at a temperature between 10 and 20 °C. Avoid storage for long time at a temperature over 25 °C. Any open can must be tightly closed under dry nitrogen.

HANDLING PRECAUTIONS

Normal health and safety precautions should be observed when handling these products :

- Ensure good ventilation
- Wear gloves, safety glasses and waterproof clothes

For further information, please consult the product safety data sheet.

PACKAGING

ISOCYANATE PX 5210	POLYOL PX 5212	KIT PX 5210 / 5212
5 Kg	2,5 Kg	3x(1+0,5)

GUARANTEE

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